High Performance Computing Software

JPL Internal Seminar Series

A Role for Performance Engineering in SuperComputer Design

Dr. Edwin Upchurch

Thursday, December 12, 2002

12:00 – 1:00 p.m.

Building 126, Room 225

Classical, and "not so classical", performance engineering techniques often employed in IT systems design may be effectively applied to leading edge supercomputer design. By their very name, supercomputers promise high performance, unfortunately their track record falls short especially when measured by productivity (cost/performance and sustained end-to-end delivery of results). This talk describes applicable performance engineering techniques and a methodology for their application to supercomputing design that takes a system view including: users, software (applications, communications, systems), and hardware. Examples are given from the author's work on GilgaMesh, Cascade and BlueGene/L (a variety of approaches to supercomputing performance ranging from 100's of TeraFLOPS to beyond PetaFLOPS).

For questions, please contact Hans Zima at 4-8980.